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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,261	07/31/2003	Yoshinao Kondoh	053588-5016	1624

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EXAMINER
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STEPHENS, JUANITA DIONNE

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/631,261	Applicant(s) KONDOH ET AL.	
	Examiner Juanita D. Stephens	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 7/31/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,10 and 11 is/are rejected.
- 7) ☒ Claim(s) 3,4,8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-7, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekiya et al. (US 4,990,939).

Sekiya et al. discloses an ink jet recording head for ejecting ink droplets to print an image, the print head (Fig. 5) comprising: 1) a substrate (10) (col 6, ln 55), 2) an insulating film layer (insulator layer 17) disposed on the substrate (col 6, lns 58-62), 3) a plurality of partition wall (formed by cover lid 21) for defining a plurality of bubbled-ink forming portions (portions where heaters 11 are located), the partition walls beings disposed on the insulating film layer along a predetermined, first direction (widthwise direction) with a predetermined distance between them (col 5, lns 49-56; as shown on Fig. 2), 4) a plurality of heater resistor portions (heaters 11) disposed on the insulating film layer within the respective bubbled-ink forming portions, a surface of each heater resistor portion having an oxidation film (heater protective layer 12) which is formed by being thermally oxidized and which serves as an ink protection layer, each heater resistor portion being formed by a bubbles-ink forming area for heating and vaporizing ink and by extended portions which are connected to opposite ends, in the first direction of the bubbled-ink forming area (col 6, lns 54-67) , 5) a plurality of pairs of electrodes

(electrodes 14 and 15), each pair of the electrodes being connected to a corresponding heater resistor portion, one electrode of each pair being a first electrode (15) and being disposed at a lower surface side of the insulating film layer (17)(Fig. 5), the other electrode of each pair being a second electrode (14) and being disposed on the heater resistor portion (11)(col 6, Ins 54-67; Fig. 5), 6) wherein an upper surface of the insulating film layer 17 is entirely covered with the partition walls and the heater resistor portions such that the upper surface of the insulating film layer is not in direct contact with ink (as shown in Fig. 5), 7) wherein at least upper surface portions of the insulating film layer (17), on which upper surface portions the heater resistor portions are disposed, are flat (as shown on Fig. 6B), 8) wherein the heater resistor portions are formed from TaSiO (col 7, Ins 42-44), 9) an ejection nozzle (orifice 24) including a plurality of nozzles at positions corresponding to the plurality of heater resistor portions (12), 10) wherein each of the bubbled-ink forming areas (area of heater 11) is of rectangular shape when viewed in top plan view (as shown on Fig. 6C), 11) another insulating film layer (heat accumulation layer 16), which is disposed between the insulating film layer and the substrate (col 6, Ins 54-62), and 12) wherein the first electrodes (15) are disposed between the insulating film layer (17) and the another insulating film layer (heat accumulation layer 16) (as shown on Fig. 5).

***Allowable Subject Matter***

3. Claims 3, 4, 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

The limitation of wherein the second electrode includes a first terminal and a second terminal, between which the bubbled-ink forming area is positioned when viewed in top plan view, the first terminal being electrically connected to the first electrode, recited in claim 3. This invention solves the problem of preventing ink from corroding an insulating film layer without further providing an additional ink protecting layer.

The limitation of wherein if the width or length, in the first direction, of each of the first electrodes disposed at the lower surface side of the insulating film layer is defined as  $W1$ , the width or length, in the first direction, of the second electrode disposed on the heater resistor portions is defined as  $W2$ , and the width or length, in the first direction, of the heater resistor portion is defined as  $W3$ , then  $W2 < W1 < W3$ , recited in claim 4. This invention solves the problem of preventing ink from corroding an insulating film layer without further providing an additional ink protecting layer.

The limitation of wherein, within each of the bubbled-ink forming portions, the first terminal and the second terminal are separated from one another in a direction substantially perpendicular to the first direction, recited in claim 8. This invention solves the problem of preventing ink from corroding an insulating film layer without further providing an additional ink protecting layer.

The limitation of wherein each of the first electrode is negative and each of the second electrode is positive, recited in claim 9. This invention solves the problem of

preventing ink from corroding an insulating film layer without further providing an additional ink protecting layer.

5. Claim 12 is allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

The combination of a plurality of pairs of electrodes, each pair of the electrodes being connected to a corresponding heater resistor portion, one electrode of each pair being a first electrode and being disposed at a lower surface side of the insulating film layer, the other electrode of each pair being a second electrode and being disposed on the heater resistor portion, the second electrode includes a first terminal and a second terminal, between which the bubbled-ink forming area is positioned when viewed in top plan view, the first terminal being electrically connected to the first electrode. This invention solves the problem of preventing ink from corroding an insulating film layer without further providing an additional ink protecting layer.

#### **Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Juanita D. Stephens

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A handwritten signature in black ink, appearing to read "J. Anita R. Peters". The signature is written in a cursive, flowing style with a large initial "J".

Primary Examiner  
Art Unit 2853

October 13, 2004